

## DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

### RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725)

#### Current Human Exposures Under Control

Facility Name:	General Motors Powertrain	General Motors North
	Group Moraine Engine	American Truck Platforms
	Plant	Moraine Assembly Plant
Facility Address:	4100 Springboro Road, Moraine, OH 45439	2601 Stroop Road, Moraine, OH 45439
Facility EPA ID #:	OHD 980 569 388	OHD 041 063 074

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

  X   If yes - check here and continue with #2 below.

       If no - re-evaluate existing data, or

       if data are not available skip to #6 and enter "IN" (more information needed) status code.

#### **BACKGROUND**

##### **Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

##### **Definition of "Current Human Exposures Under Control" EI**

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

##### **Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

##### **Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **“contaminated”**<sup>1</sup> above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

3.

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	X			PCE, TCE, DCE, VC
Air (indoors) <sup>2</sup>		X		
Surface Soil (e.g., <2 ft)	X			PAHs, PCBs, As, Pb
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)	X			PAHs, PCBs, As, Pb
Air (outdoors)		X		

\_\_\_\_\_ If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

\_\_\_\_\_ If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

Groundwater

Based on the results from the RCRA Facility Investigation (RFI) and Interim Measures, concentrations of some VOCs in groundwater are higher than maximum contaminant levels (MCLs) at some locations in the upper and lower aquifers underlying these facilities and the Delphi Thermal facility.

Surface and subsurface soil

Concentrations of some SVOCs, PCBs and metals in surface and subsurface soil at some SWMUs and Areas of Interest (AOIs) exceed Preliminary Remediation Goals (PRGs) for industrial scenarios (AOI 34 and AOI 36). PRGs are chemical concentrations that correspond to a target risk of one-in-one million cancer risk or a noncarcinogenic hazard quotient of one. PRGs have been developed by U.S. EPA, Region 9 based on the most current EPA toxicological and risk assessment information.

Refer to attached site diagrams from Figures 1-1 and 1-2.

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<sup>1</sup>“Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

<sup>2</sup>Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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[Notes: PCE=tetrachloroethene, TCE=trichloroethene, DCE=dichloroethene, VC=vinyl chloride, PAHs=polycyclic aromatic hydrocarbons, PCBs=polychlorinated biphenyls, As=arsenic, Pb=lead]

3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

<b><u>“Contaminated” Media</u></b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	No	Yes	No	No			No
Air (indoors)	No	No	No				
Soil (surface, e.g., <2 ft)	No	No	No	No	No	No	No
<del>Surface Water</del>							
<del>Sediment</del>							
Soil (subsurface e.g., >2 ft)				No			No
<del>Air (outdoors)</del>							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not “contaminated” as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“\_\_\_”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- \_\_\_\_\_ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- X   If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.
- \_\_\_\_\_ If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

There are incomplete pathways for exposure to contaminated groundwater through drinking due to the following:

- Upper aquifer-- It is predicted that the migration of groundwater contamination, if uncontrolled, may

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<sup>3</sup>Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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cause concentrations in groundwater from the upper aquifer to exceed MCLs at the Dryden Road North and South well fields. However, the migration of contaminated groundwater from the facilities is currently controlled. Also, these well fields are considered non-primary emergency drinking water supplies and are not currently scheduled for use. In addition, the groundwater from the upper aquifer at the Moraine Engine and Moraine Assembly facilities is not used for drinking or for any other purpose.

- Lower aquifer-- Groundwater contamination is predicted to cause concentrations in groundwater from the lower aquifer to exceed MCLs at the industrial wells from the Moraine Engine and Moraine Assembly facilities even if the migration of contaminated groundwater is controlled. Groundwater from these wells is not used for drinking at the facilities.

There are incomplete pathways for surface and subsurface soils at the areas below. It is noted that a risk assessment conducted for the facilities included complete pathways for these areas based on scenarios that were more conservative than real situations. The results of the risk assessment indicated that no significant risk to workers is anticipated (risk levels from exposure to contaminated surface and subsurface soils were within the acceptable range of one-in-one million and one-in-ten-thousand for cancer risk and hazard indices were less than one for noncarcinogens).

- Fill Area, AOI 34 (former excavation area) and AOI 36 (former above storage tank area)-- These areas are currently covered by asphalt parking lots. Therefore, there is no exposure to workers from contaminated surface and subsurface soils and trespassers will not be exposed to contamination from surface soils.

The only complete pathway at the facilities consists of the exposure to contaminated groundwater (lower aquifer) by workers through dermal contact and inhalation. This exposure is associated with the use of industrial wells at the Moraine Engine and Moraine Assembly facilities.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**<sup>4</sup> (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

  X   If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

       If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

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<sup>4</sup>If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

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\_\_\_\_\_ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

**Rationale and Reference(s):**

The contaminated groundwater from the lower aquifer that the workers may be exposed to through dermal contact or inhalation do not exceed Occupational Safety and Health Association (OSHA) Permissible Exposure Limits. Therefore, any exposure to workers can be considered insignificant.

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5. Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

\_\_\_\_\_ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

\_\_\_\_\_ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

\_\_\_\_\_ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s):

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

YE YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the General Motors Powertrain Group Moraine Engine Plant (OHD 980 569 388) and General Motors Truck Group Moraine Assembly Plant (OHD 041 063 074), located in Moraine, Ohio under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

\_\_\_\_\_ NO - "Current Human Exposures" are NOT "Under Control."

\_\_\_\_\_ IN - More information is needed to make a determination.

Completed by    (signature) \_\_\_\_\_ Date \_\_\_\_\_  
                         (print)        Mirtha Capiro  
                         (title)        Environmental Scientist

Supervisor       (signature) \_\_\_\_\_ Date \_\_\_\_\_  
                         (print) \_\_\_\_\_  
                         (title) \_\_\_\_\_  
                         (EPA Region or State) \_\_\_\_\_

Locations where References may be found:

U.S. EPA Record Center, 77 West Jackson Blvd., 7<sup>th</sup> Floor, Chicago, Illinois 60604.

Contact telephone and e-mail numbers

(name)            Mirtha Capiro  
(phone #)        312/ 886-7567  
(e-mail)          capiro.mirtha@epa.gov

**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**

## DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

### RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750)

#### Migration of Contaminated Groundwater Under Control

Facility Name:	Delphi Harrison Thermal Systems	General Motors Powertrain Group Moraine Engine Plant	General Motors North American Truck Platforms Moraine Assembly Plant
Facility Address:	3600 Dryden Road, Moraine, OH 45439	4100 Springboro Road, Moraine, OH 45439	2601 Stroop Road, Moraine, OH 45439
Facility EPA ID #:	OHD 000 817 577	OHD 980 569 388	OHD 041 063 074

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

  X   If yes - check here and continue with #2 below.

       If no - re-evaluate existing data, or

       if data are not available skip to #6 and enter "IN" (more information needed) status code.

#### BACKGROUND

##### Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

##### Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

##### Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are

currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The “Migration of Contaminated Groundwater Under Control” EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

**Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Is **groundwater** known or reasonably suspected to be “**contaminated**”<sup>1</sup> above appropriately protective “levels” (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

  X   If yes - continue after identifying key contaminants, citing appropriate “levels,” and referencing supporting documentation.

       If no - skip to #8 and enter “YE” status code, after citing appropriate “levels,” and referencing supporting documentation to demonstrate that groundwater is not “contaminated.”

       If unknown - skip to #8 and enter “IN” status code.

Rationale and Reference(s):

Based on groundwater monitoring results from the RCRA Facility Investigation (RFI) and the interim measures, concentrations of some volatile organic compounds (VOCs) in groundwater from the upper and lower aquifers are higher than maximum contaminant levels (MCLs) at some locations underlying the General Motors (GM) facilities, including Delphi Thermal, Moraine Engine and Moraine Assembly facilities. These VOCs are tetrachloroethene (PCE), trichloroethene (TCE), trans- and cis-1,2-dichloroethene (DCE), 1,1-dichloroethene (1,1-DCE), and vinyl chloride. Based on the distribution of VOCs in the groundwater, it appears that Area of Interest (AOI 7) is the major source of groundwater contamination at the sites.

Footnotes:

<sup>1</sup>“Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within “existing area of contaminated groundwater”<sup>2</sup> as defined by the monitoring locations designated at the time of this determination)?

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- X   If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the “existing area of groundwater contamination”<sup>2</sup>).
- If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the “existing area of groundwater contamination”<sup>2</sup>) - skip to #8 and enter “NO” status code, after providing an explanation.
- If unknown - skip to #8 and enter “IN” status code.

**Rationale and Reference(s):**

In 1996, the Delphi Harrison Thermal, Moraine Engine and Moraine Assembly facilities initiated interim measures consisting of extraction of contaminated groundwater at well TW-2 in the upper aquifer and at well DN-13 in the lower aquifer. In addition, in 1999 the facilities initiated additional interim measures consisting of in-situ groundwater remediation to address the source of VOC contamination. This groundwater remediation has included a) dechlorination by chemical oxidation within AOI 7 involving injection of hydrogen peroxide and salt catalysts, and b) reductive dechlorination through biodegradation involving injection of a carbon source solution (molasses) which provides a substrate for bacteria as energy source.

Groundwater monitoring results from the 4<sup>th</sup> Annual Capture Zone Report under the interim measures (groundwater elevation monitoring and groundwater quality monitoring) indicates that the recovery wells at TW-2 and DN-13 are effectively creating a hydraulic cone of depression to capture and control migration of VOCs at the three sites. In the upper aquifer, decreasing VOC concentrations have been observed at well location GM-10 in the upper aquifer and no VOCs have been detected at well GM-26. Among the well locations showing contaminant concentrations at levels that exceed MCLs, GM-10 would be the closest to the downgradient monitoring boundary in the upper aquifer. Well GM-26 is located downgradient from well GM-10. Similar conditions have been observed at wells GM-9 and MT69 in the lower aquifer (a decrease in VOC concentrations has been observed at GM-9 and no VOC detections have been observed at MT69 at the downgradient monitoring boundary). The downgradient monitoring boundary extends off-site approximately 2000 feet south of the Delphi Thermal and Moraine Engine facilities (southern most GM facilities).

In addition, the results from a draft Interim Measures Report dated March 2001 indicate that generally concentrations of PCE are decreasing in the upper and lower aquifer relative to the concentration of TCE and VC.

Refer to Figures 1 and 2 attached.

<sup>2</sup> “existing area of contaminated groundwater” is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of “contamination” that can and will be sampled/tested in the future to physically verify that all “contaminated” groundwater remains within this area, and that the further migration of “contaminated” groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does “contaminated” groundwater **discharge** into **surface water** bodies?

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\_\_\_\_\_ If yes - continue after identifying potentially affected surface water bodies.

  X   If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

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\_\_\_\_\_ If unknown - skip to #8 and enter "IN" status code.

**Rationale and Reference(s):**

There is no discharge of contaminated groundwater into surface water bodies based on the following site conditions (as contained in the Description of Current Conditions and RFI Report for the facilities) :

1. The reach of the Great Miami River that flows west of the facilities on a north south direction is generally a losing stream. Typically, a losing stream recharges the water table.
2. It is observed that the downgradient groundwater monitoring boundary extends 200 feet south of Holes Creek. However, Holes Creek is a losing stream and no groundwater recharge is expected.
3. The reach of the river located downstream from the facilities is considered a gaining stream. However, it is not expected that groundwater contamination from the facilities will migrate into the river because there has been no VOC detection at the downgradient groundwater monitoring boundary since at least 1998.
4. A drainage ditch extending through the north and east portions of the Delphi Thermal Moraine facility receives only storm water (the bottom of the ditch is above the groundwater surface).

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5. Is the **discharge** of “contaminated” groundwater into surface water likely to be “**insignificant**” (i.e., the maximum concentration<sup>3</sup> of each contaminant discharging into surface water is less than 10 times their appropriate groundwater “level,” and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

\_\_\_\_\_ If yes - skip to #7 (and enter “YE” status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration<sup>3</sup> of key contaminants discharged above their groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

\_\_\_\_\_ If no - (the discharge of “contaminated” groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration<sup>3</sup> of each contaminant discharged above its groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations<sup>3</sup> greater than 100 times their appropriate groundwater “levels,” the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

\_\_\_\_\_ If unknown - enter “IN” status code in #8.

Rationale and Reference(s):

<sup>3</sup> As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of “contaminated” groundwater into surface water be shown to be “**currently acceptable**” (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented<sup>4</sup>)?

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\_\_\_\_\_ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR

2) providing or referencing an interim-assessment,<sup>5</sup> appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

\_\_\_\_\_ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

\_\_\_\_\_ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

<sup>4</sup> Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

<sup>5</sup> The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

  X   If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as

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necessary) beyond the “existing area of groundwater contamination.”

\_\_\_\_\_ If no - enter “NO” status code in #8.

\_\_\_\_\_ If unknown - enter “IN” status code in #8.

Rationale and Reference(s):

There is on-going groundwater monitoring under interim measures. It is anticipated that the corrective measures for the facilities will also include groundwater monitoring.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

Y YE - Yes, “Migration of Contaminated Groundwater Under Control” has been verified. Based on a review of the information contained in this EI determination, it has been determined that the “Migration of Contaminated Groundwater” is “Under Control” at the Delphi Harrison Thermal Systems facility (OHD 000 817 577), General Motors Powertrain Group Moraine Engine Plant (OHD 980 569 388), and General Motors Truck Group Moraine Assembly Plant (OHD 041 063 074), located in Moraine, Ohio. Specifically, this determination indicates

that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

\_\_\_\_\_ NO - Unacceptable migration of contaminated groundwater is observed or expected.

\_\_\_\_\_ IN - More information is needed to make a determination.

Completed by \_\_\_\_\_ (signature) \_\_\_\_\_ Date \_\_\_\_\_  
\_\_\_\_\_ (print) Mirtha Capiro  
\_\_\_\_\_ (title) Environmental Scientist

Super vi \_\_\_\_\_ (signat \_\_\_\_\_ Date \_\_\_\_\_  
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Locations where References may be found:

U.S. EPA Record Center, 77 West Jackson Blvd., 7<sup>th</sup> Floor, Chicago, Illinois 60604.

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